

NASA WEAR

NASA WEAR Challenge Information Session Transcript – 12/16/2019

Mike McGlone: Good evening and welcome to the WEAR information session for WEAR 2020. My name is Mike McGlone. I'm at the Johnson Space Center. I'm one of the education coordinators working on this activity. Along with me is my co-host and coworker on this, Jakarda Varnado

Jakarda Varnado: Hello everybody

Mike McGlone: We are going to share with you tonight, a few things about WEAR. Give me just a moment to share my screen.

Mike McGlone: So we are recording this session tonight so we can post it online. So some of you that may be watching this as a recording. There should be a transcript there for you as well, if you need that.

Mike McGlone: So again, here is our team. You can see Jakarta and my pictures. We are both education coordinators at Johnson Space Center. Our activity is actually managed by Dr. Dynae Fullwood. She is a NASA program specialist and in charge of WEAR so you will get the chance to meet her at some of our future meetings or if you go all the way and make one the culminating events, you will get a chance to meet her.

Mike McGlone: Our session tonight is really a recap of a lot of things that are on our website. So if there is something you do not hear tonight you would like to know, please make sure you check out the website. Also, look at the frequently asked questions that we update periodically. And of course, if it is not there, we will talk more about how to communicate with us and ask questions, but we're always available by email, and some other things as well.

Mike McGlone: So jumping right into what we are going to do tonight. As I mentioned, we want to just share with you a little bit of more specifics, see if there are questions about the challenge, talk about eligibility, the timeline, how to get started, and some things to help you along the way and to answer some questions.

Mike McGlone: So the WEAR challenge. We did a pilot for this last year and had several teams make it to Langley Research Center; you see in the image there one of the young ladies modeling one of the garments that has been designed at Langley Research Center for radiation countermeasures. And we've partnered with a group called Radworks, which is part of the Advanced Exploration Systems here at NASA, and they said, "let's see what students can come up with to help us develop these radiation countermeasures that our Artemis astronauts are going to need when they go beyond low Earth orbit. So last year, we just focused on doing garments and left that as a pretty open challenge. This year, we were working with Radworks again and working to break it down into two different challenges. Or two different options

within the challenge. Option 1 is to design headgear to protect against high-energy radiation. Now this is not a spacesuit. This is not a helmet. This is headgear to wear while they are inside the spacecraft when there is a high-energy particle event like a solar flare. They call it a solar particle event or SPE. Something that they can put on for additional protection for the head during these events.

Mike McGlone: Then, option two is to design a multipurpose garment to help mitigate radiation, something similar to maybe what you see there in the image, but something that will do more than just protect the body and the blood forming organs is what they are trying to protect in this case. Because putting mass into orbit, any mass, is very challenging and very expensive, we want to see if we can use this garment in multiple ways. Can it have other purposes?

Mike McGlone: For example, one thing they have talked about is just hanging them on the wall of the spacecraft, hanging is probably not the right word for microgravity, but attaching it to the wall so that they always have that little extra bit of protection, but could it be other things? Could it be involved with the sleep restraint? Could it be something that helps them organize their personal gear when it is not in use? What else could they use it for? That is the multipurpose part of the challenge. We want to see your creativity and what else could it be used for during spaceflight.

Mike McGlone: And as I said, we're going to do an onsite commenting event. And right now we're looking at, it's going to be at the Langley Research Center. We got confirmation we are probably going to be there actually earlier this week.

Mike McGlone: Jakarda, anything else you want to share about the challenge?

Jakarda Varnado: No, just know that this year the two options are open to both the middle school and high school teams.

Mike McGlone: Yes, definitely. Thank you for pointing that out.

Mike McGlone: A little bit about eligibility. This is one area we probably get the most questions on so I will try to answer some of those questions. There are also some addressed in the FAQ, or frequently asked questions. And, of course, if you don't hear the answer to your question, please feel free to reach out to us in the future.

Mike McGlone: This activity is open to any formal or informal us education organization. It does have to be US. Sorry, no international participants at this time.

Mike McGlone: We do ask that as part of the registration that you do submit a letter of support from the principal or administrator of your organization that is just basically to confirm that your administrative support is aware of your participation.

Mike McGlone: We do ask you to fully participate. We have a lot of resources. We want to make sure you are making use of those challenge guidelines. If you miss sessions, you may

miss some important information. So really just encouraging you to take full advantage of everything that we are providing to help you be successful.

Mike McGlone: As Jakarta mentioned, this is open to both middle school and high school teams. Middle school, they must be in grades five through eight during the school year. And high school team members must be in high school nine through 12 during that school year and we defined the grades because we know not all schools have exactly the same grade ranges across the country.

Mike McGlone: We do ask the students be on only one team. Yes, teachers can perhaps coach both teams. However, if the team is selected, we are going to ask that teachers and students only come with one team.

Mike McGlone: Your organization may want to sponsor both a middle school and high school. Okay. Do they both want to do helmets or does one want to do helmets, or headgear, and the other one wants to do multipurpose that is fine. But we do need to keep middle school teams and high school teams separate.

Mike McGlone: Angela. I just see that you joined us. Thank you for joining us.

Mike McGlone: Teams must have at least two educators. One, the teacher must be current state certified and 21 years old and the other one does not have to be certified but must be 21 years old and affiliated with the organization. So maybe in an informal setting, this might be another educator, or somebody that's part of the team. Maybe some museum group sponsors and after school program could be involved. So there are some ways to do that.

Mike McGlone: And that is a minimum of two. You can take more mentors or other folks that can help - parents can help - it does not limit to who can help, but we do want to have at least two adults. In a lot of organizations, it is a minimum of two adults to lead some kind of after-school program so if it's in the classroom, you're probably okay. On travel, we absolutely have to have the two deep leadership.

Mike McGlone: And we do ask that the lead teacher complete a Moon or Mars Overview webinar with the EPDC. The EPDC is the Educator Professional Development Collaborative. It is a NASA partnership with NASA and Texas State University. They provide educator professional development and other STEM student programs. And one of those is a series of webinars for professional development credit. We do ask the lead educator, to take one of their Moon to Mars webinars and they do a couple of that particular webinar each month. So, you've got time to do that during the design process because those are not due until March. And they do that through their website and they handle all that as well. And we ask teachers to do that because our activities actually sponsored by the Moon to Mars program group.

Mike McGlone: One last thing on eligibility is that if you are selected the visit a NASA center. So if our top teams are invited to come to Langley Research Center as this looking right now, as I mentioned, then all the participants do you have to be US citizens. Now the wherever the host is, you know, if you do have some foreign exchange students or other international students, non US citizens, they can participate at that level, but the ones that do travel to

center and you have to be US citizens. They also must be age 13 to 18 during the travel time to the NASA Center. I know for middle schools that can be a little bit of a challenge so that is usually going to be some of your older students that can actually travel.

The younger ones are going to make great contributions to the activity, but they do have to be age 13 or above, I should say to travel. You do have to have those two leaders to travel, preferably certified educator at least 21 and older and one has to be a certified educator.

Mike McGlone: Four students will be invited as well as those two teachers for a team total of six.

Mike McGlone: Once you get there, we provide the housing and all. We will talk more about this in the future. So it is nearly a...when you make it is nearly a cost free. We provide food, or money for food and housing, transportation there from the US. We will get you there and home.

Mike McGlone: While you were there, you will conduct a technical presentation for NASA personnel, you see a picture there, one of the teams last year doing their technical presentation about their design.

Mike McGlone: So I am going to stop here for a moment. I am going to turn it over to Jakarta, but also want to stop and give an opportunity for question.

Mike McGlone: Welcome, Angela. Welcome to the group. If you found the chat on the bottom of the screen there should be a little chat button. If you have opened that up and had a chance to say hi. Let us know where you are from. We are at the Johnson Space Center.

Mike McGlone: Dallas. Excellent. Environmental Science Academy. Excellent. Well, welcome. This is a WEAR session. And as you know, we kind of got started. I do not know if you can see in the list there that you are the only participant tonight, but you are more than welcome. I will let you know we are recording this, feel free to drop a question in the chat at any point in time. We are both monitoring that.

Mike McGlone: We are going to go on. As I said, we are recording this session so we can post this later so we are going to cover all our topics but we want to answer all your questions as well so do not hesitate to ask one. And who knows, we may have someone else joining us here in the next few minutes as well.

Mike McGlone: So welcome, do you have any questions at this point time I will give you a second if you want to ask something or if you have a longer question, a little too much to type, just let us know you've got a question. And if you have a microphone you can open that on up and ask your question.

Mike McGlone: Nothing so far, by the end, you bet. I totally understand that. All right. Well, we're going to proceed but again, feel free to drop something in the chat at any moment in time, because we are monitoring that. Thank you. Go back and share my screen. Just a moment.

Mike McGlone: So after eligibility. Talk a little bit about the timeline. I'm going to let Jakarta talk about that briefly.

Jakarda Varnado: So just one other thing I want to mention on eligibility. We do ask that you send teachers that represent the gender mix of your team. So if you have an all-female team and you send nothing but male teachers. We are going to ask you to find at least one female teacher to send with the team. If you have girls and at least one to send with the team. If you have boys.

Jakarda Varnado: Now, as far as our key dates and time. So we've already jumped into this. We are heavily recruiting and registration is open. So if you know someone who is interested, feel free to share the website with them and also they can view this recording later if they miss tonight.

Jakarda Varnado: So these are our info sessions and they are pretty much all the same. They give the same information. We had one on the 10th and this is our second one. So we try to do them at different times throughout the day, if you have, if you know someone who can do this better during the daytime. We have one last info session. It says January the 15th, but that date is going to change. So we will update it on our website, just to let you know.

Jakarda Varnado: Now, after all of the info sessions are done we do close registration on January 24. So, at that time, we ask that you have started having conversations about doing the challenge. Decide who your second teacher will be and start thinking of the students who will participate with you. And registration is just you letting us know hey we do intend to participate. We have our letter of support from our administrator or our principal and you submit all that information to us.

Jakarda Varnado: Once registration is over. That is when you actually start trying to get your proposal together. So we are not asking you to do any technical writing for the proposal. It is an engineering design challenge, but we are being a little bit creative, since we are working with middle school and high school students and we're asking you to do a video proposal.

Jakarda Varnado: So you are going to answer the challenge, but you are going to do it in a presentation format, so we do not expect the middle schools and high schools to write a technical writing paper. So that proposal period will be from January the 28th until March 6. Now those proposals are due at two o'clock central time so you do not have until midnight or the next day. It is at two o'clock in the afternoon on March 6. Because about two weeks later on March the 20th, we are going to actually tell you who was selected to move on to the next phase and build the prototype.

Jakarda Varnado: So the proposal is just you telling us how do you expect to solve the problem. And what your design will be. And then, if you are one of the teams that are selected, you will go on to actually build your prototype. And in that prototype period, which is March 27 to about May the 22nd, remember some of these dates maybe a little bit flexible, that is where you will actually do your physical design. So the first part was your ideation and then the prototype period is you actually doing the design, making improvements, testing and reiterate, because we want you to bring that physical prototype with you when you come to the culminating event at Langley in June.

Jakarta Varnado: So what we are expecting is once your team is selected, which again happens in March, you will have about six weeks to actually make your design and we want you to bring that design with you when you come to Langley and you're going to present it to the technical team that is at Langley.

Jakarta Varnado: Angela. Did you have any questions on anything? And remember, these dates and these times are also on the website if I went through it a little quickly.

Mike McGlone: Well, we are seeing if there are any questions and look up at a couple of things on the prototype.

Mike McGlone: First, we are keeping the cost down. You know materials that are anti-radiation etc., are not things that we expect students to have access to or be raising money to buy. The prototypes we want to be able to be low fidelity and we want to, you know, look like they could be made from simpler materials like you will find at home, recycle, etc. So trying to keep those costs low for teams to do as well as we highly encouraged recycling. We've seen prototypes made out of just end rolls of material that they got donated by local fabric shop or I think we saw recycle blue jean jacket last year. So, you know, things that they can reuse. Definitely. We're not looking for... we're looking to see what it looks like and how it works, but not necessarily a full, high fidelity, 100 percent real prototype. I want to make sure that is out there as well.

Mike McGlone: A common question we've had about the June days to be determined. We are not going to go any earlier than June 15. That should give everybody a chance to be out of school, finish their finals etc. across the country. At least most of them. There are too many variations out there, but it should cover most of them.

Mike McGlone: So do we have anything posted for a question. Nope, not yet. All right, I'm going to you on then and discuss getting started with the activity.

Mike McGlone: So, the first step is to get started and register, get your letter of support from your administration. On the website, down under the Getting Started section is a link to go online to a link. It looks like a survey, and as Jakarta said, that is where you register. Contact information is basically what we're looking for, plus a couple quick survey questions, like how you found out about WEAR, and uploading that letter of support - a copy of it. And that will get you registered so that at the end of January we are ready for that next step and you are ready to kick off.

Mike McGlone: What are some things you can do in the meantime? You can start recruiting team members if you're an educator. Start recruiting the students that you want to be involved in and help from fellow folks as well for your team

Mike McGlone: If you are a student, start looking for friends and start finding a teacher that is going to be your sponsor, your lead educator, to help with this.

Mike McGlone: I have seen it work both ways. We had a team last year that the students came up to the teacher about two days before registration and then she said yes, so long as they got it all together in two days and they made it happen. So it can happen in many different ways so go out there and do it.

Mike McGlone: Get organized. You know, if you have got a large group of students and want to elect a captain or go through some of those kinds of things. If you are going to use it in the classroom, you know, think about lesson plans, we will talk about more that in a moment. Whatever is going to work for your organization, you know, being both for formal and informal, it works in both, but you have to think about how you are going to put it together.

Mike McGlone: Again, you want to do that webinar that I mentioned that the EPDC does. You can go ahead and do one of those here in December, perhaps, or definitely go ahead and get signed up for it in January and get it on your calendar. You do not have to turn it in until proposal time, in March, but you want to get it done.

Mike McGlone: One more and then I think we probably have a couple of chat questions to answer.

Mike McGlone: Start working on background information. Some of you may, this may be something that you are familiar with, or something that you need to learn more about engineering design challenge, etc. There are some resources and lesson plans we have put together and posted on our website. If you have not found that yet, under Resources, there is a downloadable list. It has videos. It has website links to information about radiation. It has a number of different things that are actually lesson plans if you want to use this in the classroom. Those lessons can also have some background information to use in an informal setting, but they can also be things that you can use in the classroom. We actually have them set up for elementary, middle and high school age so you can reach out to a number of different groups as well. So make use of those and get started. Let the kids learn about radiation effects on the human body and the engineering design process.

Mike McGlone: So we have a couple of questions.

Mike McGlone: When is the required March webinar? Again, there is a series of them. You can do it on your own. Well, at least your own choice when the EPDC offers it. They said they usually offer it at least twice a month and it needs to be completed by March 6, by the deadline for the design period. So, there are several opportunities between now and then to do that. In fact, if you are really gung ho, I think they actually have one tomorrow evening, you can probably register for and do it then. And for that website, to find those and sign up for them is on the website as well for the EPDC there is a link directly to their page.

Mike McGlone: Share my screen again. So speaking of resources, Jakarta, you want to talk about those briefly.

Jakarta Varnado: There are resources that will be provided to you. In addition to the Moon to Mars webinar, feel free to take part of any of the other webinars that are on the EDC site that may help you with this challenge.

Jakarda Varnado: And there are some things that are in there for teachers. There are also some badges for the students. So you can have your students do some of those as part of this challenge.

Jakarda Varnado: There will be a list of resources provided for you. Also, there are some little lessons that you can incorporate into your classroom that have to do with radiation or the engineering design process or things that gives the students a little bit more background on radiation.

Jakarda Varnado: So we ask that the lead teacher for sure does the Moon to Mars webinar but if you have any other teachers that would like to participate we encourage them to also do the webinar or any of the other ones that you see on the EPDC site.

Jakarda Varnado: And again, as part of the design process, we will have some information sessions with the subject matter experts. So these are NASA experts on radiation, on traveling to the Moon, on designing these garments. So, the RadWorks team actually works to design these garments now and you will get to talk to some of the members of that team. So these webinars are open to all of the participating team. So this also may be an opportunity for you to collaborate with other teams. And here are some of the questions that they are asking and to help you prepare

Jakarda Varnado: And of course, we want you to post your progress on social media because again that's another opportunity for collaboration where you can see what other people are doing and share what you are doing. You can get some ideas and some feedback.

Mike McGlone: Sorry, I needed to unmute. Okay. So yeah, we are not going to just, throw out a challenge and leave you. We are going to provide you with resources and other folks. Webinars and things we can provide that will help guide you to do, but many things that will help you be successful in this project. Alright.

Mike McGlone: So this is a great experience for yourself and the students. If you have never done anything with NASA the kids get very involved. It is for middle school and high school teams. Actually everybody that participates. Yes, it is a little bit special. For the four that get to come to a NASA center, and the teachers as well, but we are also going to provide opportunities for them to link back with the whole team presentations. We usually live stream those. We try to live stream some of the other experiences so we can share that with as many people as possible. And this actually contributes to NASA's mission.

Mike McGlone: The RadWorks team is charged with working on these types of garments, but they are looking for other ideas - out of the box thinking. Students can bring some wonderful ideas. Matter of fact, right now, from last year's pilot activity, they have got a couple ideas that they're working on a new prototype as well, integrating some of the thoughts and ideas that actually a couple of teams brought to them that they were able to pull from last year. All had great ideas, but there are a couple that are already being implemented. And who knows, you could actually find one of your ideas actually going to the Moon or Mars sometime in the future. So it is a great opportunity and we hope you'll take advantage of it.

Mike McGlone: Somebody else joined on the phone.

Mike McGlone: That is all I see, the phone number, at the moment and in a little bit will unmute and give you a chance to introduce yourself here in just a couple minutes. But in the meantime we're going to wrap up, I think our last section and talking about some frequently asked questions. Jakarda, I think you're going to take the lead.

Jakarda Varnado: Some of the questions that we get most often we are going to summarize those real quick here. But remember, there is also the FAQ on the website. So you can always go back to the website and check those frequently asked questions because they will be updated.

Jakarda Varnado: So the most common one we have right now is can you have more than one team from your institution. Yes, but just remember that if you do have more than one team, you need to have the additional adult support to support more than one team. And that if you are talking about more than one team, let's say that you're a K-12 institution, just remember that only middle school students can compete on the middle school team and only high school students can compete on a high school team, you cannot mix the two.

Jakarda Varnado: Also can informal institutions participate. So this would be your science centers, your museums, maybe your library does an after-school maker space. All of those are welcome to participate. Also, just remember the eligibility requirements and that at least one educator must be certified.

Jakarda Varnado: How do middle school students compete with high school students? They will not. Middle school will compete against middle school and high school will compete against high school students. So, we will not mix the two, but the option is available - both options are available to both middle school and high school. So if you decide to do garments, the multipurpose garment and your middle school, then you will be competing against another middle school that does multipurpose garments. We will not make you compete against a high school.

Jakarda Varnado: And the big one is how many students can be on a team? So, your team can be as large as you want it to be. Just keep in mind, again, that everyone must meet the eligibility requirements. And that only four students will be allowed to travel to the NASA center. So if you have a very large team and it will be up to you and the team members to figure out how you're going to pick the students that get to go. The students that are chosen must meet eligibility requirements.

Jakarda Varnado: And you know, that's up to you how big you want to make it. Some people say, well, I'm only going to make a team of four people. Just keep in mind that this is a lot of work. So the more people that you have, the more ideas that you get, the more people that can contribute to this, the better your product will be

Jakarda Varnado: So the video proposals are due in March. Again, that date is flexible, but right now we're looking around March 6, and that's 2020 so you'll have about six weeks to do your video proposal as far as getting your design ready. The ideation part of it.

Jakarda Varnado: Is there a limit to the number of students who can take the webinars and the badges? No. They are open to both educators and students. So if you have a class that you want to do this, the badges as part of your class as an assignment, you can assign this to your entire class, but you will be managing their badges.

Jakarda Varnado: Now the webinars, again, are going to be subject matter experts, so you will decide your students are ready to hear that high level or if you want to go to the webinar and then present the information to them. But they will be open to anybody. As long as you have the access to the technology and you can meet at the time that they have.

Jakarda Varnado: Do teachers only have to take the webinar and do the badge? We don't have to send a written proposal? So the proposal is not written. It is not a technical writing proposal. Again, it is a video proposal. So the webinars to help you just prepare with the background information that is required for the challenge. It gives you some ideas of where you want to lead your students in their research. And it allows you to connect with other teachers that are doing the challenge. So again, there is no written proposal that we are asking for the teachers or the students. It is all video. But later on, we may ask for some technical documentation that may be a copy of your engineering notebook. You may be your design your drawings. Your sketches. How did you do your research, what were your references? So any of those may be submitted, or we may ask for those as a part of the process.

Jakarda Varnado: Any questions so far on just some of these, you know, common questions that we get?

Jakarda Varnado: Seeing none. Alright, so is this a free trip? It is not totally free because, of course, we are asking you to come up with a design. Again, like Mike said is, is a low fidelity design so we are not asking you to go buy the materials that they use in space. where as new to give us an idea of what this would look like. So we do not ask you to pay for your travel, we will pay for your travel from wherever you are in the United States. Now, how that travel looks like will depend upon the modes of transportation that are available from your area. So we will pay for your travel, your baggage, your meals, and your lodging once you are one of the selected teams. Anything like souvenirs, or any incidentals that you incur will be your responsibility and we will not pay for those.

Jakarda Varnado: And this the time that this will take. So this will depend again on your team and how much time that you have as the educator. So some people will do this as a part of their classes and your students will work on it every day. Some people will do this as an after school program and they may work on it once a week. Some people may only meet once a month, because they are a club. The time will be your decision. We will not give you a designated check in point. Well, we will ask you to stick to the timeline that is established. So when proposals are due we are expecting you to ration out your time so that you meet that deadline.

Jakarda Varnado: And some of the benefits of participating. Of course, your kids get exposed to NASA. That's number one. So they get to know some of the ways that they can contribute to NASA, because these designs are actually going to the team that are working on these types of garments currently. And they'll get to see interact with those scientists and those engineers as a part of this process. But of course, you know, just by participating in engineering design challenge you get to practice some of those 21st century skills such as communication, presentation, collaboration, being the leader, all of those things that we hear that the kids need more practice with and we are introducing it to them at an earlier age before they actually get to the workforce.

Jakarda Varnado: Anything I might have missed there Mike?

Mike McGlone: No, that is pretty good. One little note, I see it there in the answer to question two is one thing to note is that Moon to Mars webinar. It's an hour and but if you do need a continuing education or professional development credits, it will count for that they will provide a certificate if you need that for recertification. Some teachers in some states need that - not every place, but that is available for that as well. So few other benefits there as well.

Jakarda Varnado: We keep saying about the Moon to Mars webinar. That is something that is conducted by the EPDC and that a link to the website is on our site so you will be able to go to their website and see all of the badges and the webinars that they currently offer.

Mike McGlone: So again, we are going to open it up to see there are any questions. If you have any, drop them in the chat here, just in a minute. If you are doing this by phone, we will give you a chance to see if you have any questions as well.

Mike McGlone: If you do not have any, maybe not tonight, we are going to post the recording of this webinar this evening on the website. You can go back and rewatch it if you need to. Again, the frequently asked questions, there is a downloadable document that you can download there as well, and check, in a few weeks. We will probably have updated it again with a few other questions we will get.

Mike McGlone: Most of those questions come from people emailing us. You see our JSC-EPD address there at the top. That is one you can send to our whole team and we all monitor and answer as quickly as we can - even a little bit over the holidays. I will say over the next couple of weeks it may take a couple days to response, but we will be responding.

Mike McGlone: Our website has most of the answers there. If you watch the recording of this video, read through the FAQs, you will find most of your answers there on the website. And if not, definitely reach out to us.

Mike McGlone: You can see what some teams have done in the past, by using our hashtag. As I said, though we had several teams do this last year. There are still some things out there posted. You can see what they did. And we will use that #NASA_WEAR hashtag. So you can monitor throughout this period as well about all the fun things that different groups are doing.

Mike McGlone: As I mentioned, this is part of our Moon to Mars activity. So going to stop and talk a little bit more about WEAR. I see somebody else join. Murphy just jumped in and joined us here at the end.

Mike McGlone: So we are just wrapping up our formal part but we're going to open it up for questions. So if there are some certain things you wanted to ask you can drop them into the chat at the bottom. Your screen should have a chat window you can open.

Mike McGlone: Or maybe Sean you are on the phone at the same time. Looks like maybe...I'm checking my participant list, see what I can find there.

Mike McGlone: So again, welcome. So, Angela. Did you have any other questions or Sean?

Mike McGlone: Sean if you got a question? If you want to go ahead and unmute and ask that, I think I'll be able to hear you.

Sean Murphy: Oh,

Mike McGlone: Yes. Go ahead.

Sean Murphy: I'm, I'm the captain of the team in South Carolina.

Mike McGlone: Okay, South Carolina. Welcome, South Carolina.

Sean Murphy: Um, so for the webinars. So students can take that webinar as well.

Mike McGlone: Yes, students can take that. It is really an overview of what the Moon and Mars activity is and resources for educators and students. These are actually on our resource list and some other NASA curriculum materials and lessons videos and other resources that may be of more direct interest students on learning more and we will also have some special, direct webinars that will actually do ourselves with NASA experts such as our RadWorks team, it is our partner on this, and some others here at Johnson Space Center we work with.

Mike McGlone: Since this is the home of human spaceflight, we have doctors and folks across the street here that are constantly working on what radiation does to the human body and we have a...I say an SME that's a subject matter expert lined up to do a webinar for all of our participants about that and yes all those are open to all the students.

Mike McGlone: If it happens to be at a time that they cannot attend, we record them so they can be watched at a later time as well during a club meeting or during class. So we do our best to make them available to as wide an audience as possible.

Sean Murphy: Okay. Thank you.

Mike McGlone: You bet.

Mike McGlone: This is our open question time. Previous so feel free. If you've got some others...feel free to speak up.

Mike McGlone: South Carolina. Sorry, I did not quite catch your name, but that is okay and Angela, if you've got something, drop it in the chat or let us know you've got a long question. You can unmute and speak. We will do that as well. So did you have another question on the phone?

Sean Murphy: I don't really have any other questions.

Mike McGlone: Okay. I just thought I heard something. Just wanted to check.

Mike McGlone: Yes, and all the resources are posted to the website, it is a Word document with a lot of clickable links and yes it does take over time to look through them. Again, it is divided into elementary, middle school and high school levels so that can help you, you know, focus it a little bit, but again there's a wide variety of things there.

Mike McGlone: There are also other things such as some direct links to some YouTube videos that our experts have posted from across NASA and some different subjects. So quite a few things there. So yeah, do take some time to explore it. And again, reach out if you've got any questions.

Mike McGlone: And also take a look at what's available on the EPDC website as well as we get closer. They have been reworking their site and we've been reviewing the material. They've got a couple new badges that we think might be helpful for teachers or students to look through. We're still evaluating those, but new things are coming out all the time as well. And we're going to pass those along that we think will be helpful to folks.

Mike McGlone: Like so many things, it does take just a little bit of time. I understand.

Mike McGlone: Well, if there are any others. I don't want to run anybody off, but look like we covered our key points tonight, as I just mentioned.

Mike McGlone: If you've got other questions, please feel free to look over the website, download those resources and look at the links that we've shared look at those resources if you've got other questions.

Mike McGlone: Please feel free to reach out to us via email or by phone. There's a special line that's posted on the website as well that you can reach out to us as well.

Mike McGlone: We will return those as quickly as possible, again, over the holiday breaks it may take us a little bit longer to return but we both are working during that time off and on. So, we will get back to you just as soon as possible.

Mike McGlone: Do you want to stay if you do have any other last minute questions. We are happy to answer those.

Mike McGlone: But if there are none. Then we can wrap it up just a little bit early this evening.

Mike McGlone: But I am not going to run anybody off. So I'm going to wait just a couple minutes and see if any other questions pop in the chat. Jakarta, do you have anything else you would like to say or do, as we start to kind of wrap up.

Jakarta Varnado: No, no additional questions or comments just encouraging everybody to get an early start. I know it is the end of the semester. Everybody's getting ready for Christmas break, but just have an idea in mind of, you know, which students or if students are interested in also getting that letter of support. So it may be something that you have to go back and ask for a couple of times. So just go ahead and put it out there that you are going to need a letter at some point. So that is in the back of your principal or administrators mind.

Mike McGlone: Yes, that is a great point. Sometimes it does take a week or so to get that letter done, signed, back to you and actually complete registration.

Mike McGlone: Okay, great, folks. Again, if you do have any questions please reach out to us via email or by the phone and we will do our best to answer things as quickly as possible. We hope to see you in January. We will have our first team meeting and get underway, doing the WEAR challenge. Thank you all so much for joining us tonight and I am going to wrap it up. I will hang on for just a moment, see if there are any others. I am going to stop the recording at this point.